

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.R5-2005-XXXX

NPDES NO. CA0085049

WASTE DISCHARGE REQUIREMENTS
FOR
THE BOEING COMPANY
SOUTHERN GROUNDWATER STUDY AREA EXTRACTION AND TREATMENT SYSTEM
INACTIVE RANCHO CORDOVA TEST SITE
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The Boeing Company (Boeing or Discharger) submitted a Report of Waste Discharge, dated 9 February 2005 requesting a revision to their National Pollutant Discharge Elimination System (NPDES) permit, Order No. R5-2005-0018. The requested revision was to allow the effluent to be used for dust control and compaction at an adjacent housing development, in addition to the discharge to surface water and injection from two groundwater extraction and treatment systems in the Southern Groundwater Study Area (SGSA) of the Inactive Rancho Cordova Test Site (IRCTS). The revisions are discussed below in Finding Nos. 15 and 16.
2. Boeing operated a rocket-testing facility in eastern Sacramento County near Rancho Cordova and Folsom. The facility is on property known as the IRCTS and is currently owned by the Aerojet-General Corporation (Aerojet). See Attachment A, a part of this Order. Boeing, along with Aerojet, performed practices that have caused the release of pollutants into the vadose zone and groundwater at the IRCTS. The main pollutants of concern at the IRCTS are perchlorate, a component of solid rocket propellant, and volatile organic contaminants (VOCs) such as trichloroethylene (TCE) used in the cleaning of equipment.
3. The SGSA, as depicted in attachment B, a part of this Order, is the groundwater beneath the southern portion of the IRCTS and south of the IRCTS. Two plumes of pollutants from the IRCTS are migrating in the groundwater in the SGSA to the south and southwest across Douglas Road and underneath the new Sunrise Douglas development. See Attachment C, a part of this Order. One plume is associated with releases from the Alpha Complex and contains TCE, cis-1,2-dichloroethylene (1,2-DCE), and perchlorate. The second plume is associated with releases from the Administration Area and contains TCE and 1,2-DCE. These plumes of pollutants create or threaten to create a condition of pollution or nuisance. Cleanup actions are being conducted in response to an Imminent and Substantial Endangerment Order issued by the Department of Toxic Substances Control (DTSC).
4. To comply with the ISEO, Boeing submitted a plan proposing to initially extract groundwater from approximately four locations on, and south of, the IRCTS. The two extraction and

treatment systems (GETs), Alpha System and Administration System, are discussed separately below.

Alpha Area GET

5. The treatment system and discharge are in Section 24, T8N, R5E, MDB&M. The treatment system is at Latitude N38° 33' 34" Longitude W121° 14' 3". The discharge from the Alpha GET is to Morrison Creek, at Latitude N38° 34' 55", Longitude W121° 14' 3" and is identified in this permit as Outfall 001. Morrison Creek discharges into Stone Lake over 18 miles downstream from the discharge point, and eventually to the Sacramento River. See Attachment D, a part of this Order.
6. The Report of Waste Discharge for the Alpha GET, including data from sampling nearby groundwater wells, describes the discharge as follows:

Monthly Average Flow:	0.648 mgd
Daily Peak Flow:	0.792 mgd
Design Flow:	0.864 mgd
Average Temperature:	72°F summer; 67°F winter
pH	7.8-8.4

<u>Constituent</u>	<u>mg/L</u>
COD	<10
Total Suspended Solids	<10
Chlorides	3.6
Sulfate	6.2
Manganese	<0.02
Aluminum	<0.050
Zinc	0.026
Arsenic	0.001
Lead	0.001
Hardness (as CaCO ₃)	53
Barium	0.042
Copper	0.006
Chromium	<0.002
Nickel	0.002
All Volatile Organic Contaminants	<0.0005
Perchlorate	<0.004
Total Dissolved Solids	150

7. Approximately 450 gallons per minute (gpm) of groundwater from groundwater extraction well EX-25 will be treated at a GET adjacent to Douglas Road. The treatment system will consist of bag filtration, up to four 60-cubic foot ion exchange resins vessels operated in two trains of two in series for perchlorate removal, and two 10,000-pound granular activated carbon (GAC) vessels operated in series for removal of TCE and 1,2-DCE. As the GAC and ion exchange vessels are operated in series, when concentrations of pollutants in the effluent from the lead vessel is approximately equal to the influent, the lag vessel is switched to the lead mode and the other vessel becomes the lag vessel after having replaced the carbon or ion exchange resin, respectively. The spent carbon and/or resin are transported to a permitted facility for destruction of the adsorbed volatile organics and/or perchlorate.
8. GAC has been demonstrated to be able to reduce volatile organic contaminants, which include TCE and 1,2-DCE, to less than 0.0005 mg/L. The ion exchange perchlorate treatment system has been demonstrated to be able to remove perchlorate to below 0.004 mg/l.

Administration Area GET

9. The treatment system and discharge are in Section 10, T8N, R7E, MDB&M. The treatment system is at Latitude N38° 33' 39" Longitude W121° 21' 27". The discharge from the Admin GET is to Morrison Creek, at Latitude N38° 34' 10", Longitude W121° 12' 24" and is identified in this permit as Outfall 002, upstream of the discharge from the Alpha Area GET, or to recharge wells (Outfall 003) as described below in Finding No. 10.
10. The Administration Area GET has been operational as an interim system since 2002. The interim system operated a single groundwater extraction well at a flow rate of 1-5 gpm. The water was treated using GAC and discharged to a vadose zone recharge well under Waste Discharge Requirements Order No. R5-2002-0008. Excessive biofouling of the recharge well, and the low flow from the extraction well, led to the shutdown of the interim system in Spring 2004. Since then, Order No. R5-2002-2008 was revised by Order No. R5-2004-0117 to allow the discharge from three new extraction wells from aquifer testing and long-term operation to a new recharge well (IW-01), in addition to the vadose zone recharge well. The estimated flow rate of 150-250 gpm from the three extraction wells may not be accommodated by IW-01 and the vadose zone recharge well. Therefore, this permit allows that treated groundwater in excess of the capacity of the recharge wells be discharged to Morrison Creek.
11. The Report of Waste Discharge for the Administration Area GET, including data from sampling nearby groundwater wells and the previously operated GET system, describes the discharge as follows:

Monthly Average Flow:	0.360 mgd
Daily Peak Flow:	0.432 mgd
Design Flow:	0.360 mgd

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 SACRAMENTO COUNTY

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Average Temperature: 72°F summer; 67°F winter
 pH 7.8-8.4

<u>Constituent</u>	<u>mg/L</u>
COD	<10
Total Suspended Solids	<10
Chlorides	5.2
Sulfate	3.1
Manganese	<0.02
Aluminum	<0.050
Zinc	0.020
Arsenic	0.001
Lead	<0.001
Hardness (as CaCO ₃)	58
Barium	0.042
Copper	0.006
Chromium	<0.002
Nickel	<0.02
All Volatile Organic Contaminants	<0.0005
Perchlorate	<0.004
Total Dissolved Solids	150

12. Approximately 150 to 250 gallons per minute (gpm) of groundwater from groundwater extraction wells EX-20, EX-21, and EX-22 will be treated at a GET in the western portion of the Administration Area. The treatment system will consist of a 6,650 gallon equalization tank bag filtration, bag filters, and two 5,000-pound GAC vessels operated in series for removal of TCE, 1,2-DCE, and Freon-113. As the GAC exchange vessels are operated in series, when concentrations of pollutants in the effluent from the lead vessel is approximately equal to the influent, the lag vessel is switched to the lead mode and the other vessel becomes the lag vessel after having replaced the carbon. The spent carbon and/or resin are transported to a permitted facility for destruction of the adsorbed volatile organics.
13. Recharge Well IW-01 is screened from 290 to 390 feet below ground surface in the Mehrten Formation. The extracted groundwater is taken from the Laguna and Mehrten Formations, as well as, the transition zone between the formations. The quality of the injected water is essentially equivalent to that found in the receiving formation.
14. Freon-113 has been detected in groundwater at the Administration Area, but not in the extraction wells. GAC has been shown to be able to reduce Freon-113 to less than 0.0005 mg/L.

Permit Revision Findings

15. The Discharger will provide the Sunrise Douglas Development with effluent from the EX-25 treatment system to be used for dust control and compaction during grading for construction of their development. The effluent will be stored in a tank for use by the developers as needed. Excess flow will be to Morrison Creek.
16. It is estimated that the water requirements for construction could use up to the entire effluent from EX-25. See Attachment B for the location of the development on which the effluent will be used. The Assessor's Parcel Numbers are 057-0650-004, 057-0650-005, 057-0650-010 and 057-0650-022.

Basin Plan Findings

17. The Board adopted the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates the beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.
18. The U.S. Environmental Protection Agency (EPA) and the Board have classified these discharges as minor discharges.
19. The permitted discharge to surface water allows some degradation of water quality but is consistent with federal antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16 (Antidegradation Policy) because the permitted discharge is required to result in best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and will maintain the highest water quality consistent with the maximum benefit of the people of the state
20. The Basin Plan at page II-2.00 states: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not specifically identify beneficial uses for Morrison Creek, but the Basin Plan does identify present and potential uses for the Sacramento – San Joaquin Delta, to which Morrison Creek is tributary. The Basin Plan identifies the following beneficial uses for the Sacramento – San Joaquin Delta: municipal and domestic supply, agricultural irrigation, agricultural stock watering, industrial process water supply, industrial service supply, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation. The Basin Plan states on page II-1.00: "Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning..." and with respect to disposal of

wastewaters states that "... disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

Upon review of the flow conditions, habitat values, and beneficial uses of Morrison Creek, and based on hydraulic continuity, aquatic life migration, and existing and potential water rights, the Regional Board finds that the following beneficial uses identified in the Basin Plan for the Sacramento - San Joaquin Delta are applicable to Morrison Creek:

a. Domestic Supply and Agricultural Supply

The Regional Board is required to apply the beneficial use of MUN to Morrison Creek based on State Board Resolution 88-63, which was incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056. In addition, the State Water Resources Control Board (SWRCB) has issued water rights to existing water users along Morrison Creek for irrigation and the Sacramento – San Joaquin Delta downstream of the discharge for domestic and irrigation uses.

b. Water Contact and Noncontact Recreation and Esthetic Enjoyment

The Regional Board finds that the discharge flows through residential areas, there is ready public access to Morrison Creek, and exclusion of the public is unrealistic. Prior to discharge into the Sacramento – San Joaquin Delta, Morrison Creek flows through areas of general public access, residential areas, to the Sacramento – San Joaquin Delta. The Sacramento – San Joaquin Delta also offers recreational opportunities.

c. Warm and Cold Freshwater Aquatic Habitat

The California Department of Fish and Game found several warm water species in Morrison Creek. They also reported that a study conducted by the Sacramento Regional County Sanitation District found Chinook salmon, a cold water species, in the Bufferlands area, which includes Upper and Lower Beach Lakes. Morrison Creek seasonally flows into the Bufferlands area, which is within the legal boundary of the Sacramento-San Joaquin Delta. CWA Section 101(a) establishes an interim goal of protecting fish and wildlife and recreation uses, i.e., the "fishable/swimmable" goal. The State is required to protect fish and wildlife and recreation uses unless it specifically removes those uses in compliance with the federal regulations at 40 CFR 131.10.

The Regional Board also finds that based on the available information and on the Discharger's application, that Morrison Creek, absent the discharge, is an ephemeral stream. The ephemeral nature of Morrison Creek means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life.

21. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (hereafter Resolution 68-16 or the “Antidegradation Policy”) requires the Board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board’s policies (e.g., quality that exceeds water quality objectives).
22. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
23. The discharge will consist of extracted groundwater being, treated to remove the VOCs, and recharged back to the aquifers whence it was extracted. The recharge water will be of similar quality as the groundwater to which it is being recharged. Therefore, no degradation of the groundwater will occur due to the discharge. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16.
24. This Order does not require that the Dischargers conduct groundwater monitoring. Groundwater monitoring and analyses are already required under orders issued by the Department of Toxic Substances Control (DTSC), with oversight by DTSC and Board staff.
25. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan’s incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
26. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain tastes or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Reasonable Potential Analysis

27. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan), which contains guidance on implementation of the *National Toxics Rule* and the *California Toxics Rule*.
28. The Basin Plan establishes numerical and narrative water quality objectives for surface and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Board will, on a case-by-case basis, adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.
29. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. Based on information submitted as part of the application and from past monitoring, the Board finds that the proposed discharge has a reasonable potential to exceed standards and objectives for the constituents discussed in the Information Sheet for the following constituents:
 - a. **Trichlorethylene (TCE).** The effluent limitation for TCE is set at 0.0005 mg/L, below the California Public Health Goal and Primary Drinking Water Standard of 0.0008 mg/L and 0.005 mg/L, respectively.
 - b. **Cis(1,2)-Dichloroethylene (cis-1, 2-DCE).** The effluent limit for cis-1,2-DCE is set at the Primary Drinking Water Standard of 0.006 mg/L.
 - c. **Freon-113.** The Primary Drinking Water Standard for Freon-113 is 1.2 mg/L. GAC has been shown to remove Freon-113 to less than 0.0005 mg/L, which is the effluent limitation established in this Order.
 - d. **Perchlorate** The current California Department of Health Services Action Level for perchlorate is 0.006 mg/L. The effluent limitation for perchlorate is established at 0.004 mg/L.
 - e. This Order and the Basin Plan prohibit the discharge of toxic constituents in toxic amounts. Based on information submitted as part of the application and monitoring reports, trichloroethene and perchlorate have a reasonable potential to cause or contribute to a violation of the Basin Plan narrative prohibition of the discharge of toxic substances in toxic concentrations. The Water Quality Standards: Establishment of Numeric Criteria

for Priority Toxic Pollutants for the State of California; Rule (California Toxics Rule) is promulgated in the Federal Register, 40CFR Part 131, Part III. Effluent limitations for trichloroethene, cis-1,2-DCE and Freon 113 based on the California Toxics Rule and Best Available Technology (as described above), are included in this Order.

30. Section 13241 of the Water Code requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality objectives. These waste discharge requirements implement adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.

Treated Groundwater Reuse Evaluation

31. Under another Board Order, Boeing, in coordination with Board staff, USEPA, California Department of Health Services (DHS), the Sacramento County Water Forum, Aerojet, and selected water purveyors evaluated alternatives of discharge of the treated groundwater other than surface water. In September 2003, Boeing submitted a final version of a report containing this evaluation. That report recommended alternatives for reuse of the groundwater including environmental uses and municipal supply. In August 2003 Boeing and Sacramento County reached an agreement whereby the County has agreed to develop the reuse of the treated groundwater being discharged under this Order. The reuse will include, but be not limited to, the replacement of existing and future lost water supplies and provide supplies for new development in the Rancho Cordova area.
32. The Basin Plan adopted by the Board includes a Wastewater Reuse Policy that encourages the reclamation and reuse of wastewater, including treated groundwater resulting from a cleanup action, where practicable. Those reuse options include municipal and industrial supply, crop irrigation, groundwater recharge, and wetland restoration. At this time demonstrated cost-effective options that provide for reuse of the treated groundwater have been identified in Boeing's Reuse Plan, as described in Finding No. 30. The County is currently developing a project for reuse of the treated groundwater that will proceed through the CEQA process. Completion of the County project will likely not occur until Spring 2009.
33. The project has a potential effect on the sustainable yield of the groundwater basin from which the IRCTS extraction field takes its water. The Regional Board has addressed this potential effect by evaluating alternatives to allowing the proposed discharge. No feasible alternative to the proposed project exists at this time. Neither reuse nor recharge of the treated groundwater is feasible at this time. Neither direct nor indirect reuse is feasible at this time and the Regional Board does not have the authority to direct the manner of compliance

(e.g., to direct recharge or reuse of the treated groundwater). The alternative of not allowing the proposed discharge to surface waters exists but poses serious environmental consequences because it would impede the cleanup of the groundwater. Pursuant to California Water Code Sections 13267 and 13383, provisions the previous version of this Order required Boeing to submit technical reports evaluating whether there are impacts on the sustainable yield of the groundwater basin caused by the permitted activity and evaluating potential direct and indirect reuse options for the discharged water. On 13 September 2003, Boeing submitted a report that contained the analysis on the affect of the pumping on the aquifer yield. The report stated that there would be an additional drawdown in the eastern part of Sacramento County of up to 30 feet in some locations. Implementation of the reuse alternatives that were identified in the reuse plan described in Finding Nos. 30 and 31, above, will substantially mitigate the impact of the withdrawal of groundwater for remediation purposes. The required evaluations allowed the Board to determine whether there are additional environmental impacts associated with the Dischargers' pumping. The Board will encourage reuse of treated groundwater consistent with the Wastewater Reuse Policy set forth in the Basin Plan.

Other

34. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301, 302, 304, and 307 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
35. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), requiring preparation of an environmental impact report or negative declaration, in accordance with Section 13389 of the California Water Code.
36. On 1 December 2001, in accordance with the California Environmental Quality Act (CCR, Title 14, Section 15261 et. seq.), the Department of Toxic Substances Control certified a final Class 6 Categorical Exemption for the groundwater treatment facilities.
37. The Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
38. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
39. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided EPA has no objections.

IT IS HEREBY ORDERED that Order No. R5-2004-0117 is rescinded and The Boeing Company, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of treated wastewater at a location or in a manner different from that described in Finding Nos. 5, 9, 10, 15 and 16 is prohibited.
2. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by the attached Standard Provisions and Reporting Requirements A.13.
3. The discharge shall not cause the degradation of any water supply.
4. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.
5. Discharge of waste classified as 'hazardous' under Section 2521, Chapter 15 of Title 23 or 'designated', as defined in Section 13173 of California Water Code is prohibited.

B. Effluent Limitations:

1. Effluent from the treatment facilities through Outfalls 001, 002, and 003 shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>
Volatile Organics ^{1,2}	µg/L	0.5 ¹	
Perchlorate	µg/L	6	4
Chlorine Residual	mg/L	0.02	0.01

¹ All volatile organic constituents listed in EPA Methods 8010 and 8020. The concentration of each constituent shall not exceed 0.5 µg/L.

² For two weeks after placement of new ion exchange resin, the effluent limit for each trihalomethane is 10.0 µg/L.

3. The discharge shall not have a pH less than 6.5 nor greater than 8.5.

4. The 30-day average daily discharge flow shall not exceed 0.65 mgd for the Alpha GET and 0.43 mgd for the Administration Area GET.
5. Survival of aquatic organism in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay - - - - - 70%
Median for any three or more consecutive bioassays - - - - 90%

C. Activated Carbon, Resin and Sludge Disposal:

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Processing or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20004, et seq.
2. Any proposed change in activated carbon, resin or sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and EPA Regional Administrator at least **90 days** in advance of the change.
3. Transportation and disposal of GAC and resin shall be only by a permitted hauler and disposed at a permitted regeneration/disposal facility.

D. Receiving Water Limitations:

Receiving Water Limitations are site-specific interpretations of water quality objectives from applicable water quality control plans. As such they are a required part of this permit.

The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
4. Chlorine detected in the receiving water.
5. Aesthetically undesirable discoloration.
6. Fungi, slimes, or other objectionable growths.

7. Turbidity to increase as follows:
 - a. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
 - b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
 - c. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
 - d. More than 10 percent where natural turbidity is greater than 100 NTUs.
8. The normal ambient pH to fall below 6.5, exceed 8.5, or to change by more than 0.5 pH units.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. The normal ambient temperature to be increased more than 5°F.
11. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
12. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
13. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
14. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
15. Violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.

E. Provisions:

1. One month prior to commencement of operation, the Discharger shall submit an Operation, Maintenance, and Monitoring Plan for the Ground Water Extraction and Treatment Systems for approval. The Discharger shall operate the treatment systems according to the approved plan, and any approved revisions.

2. The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharge shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE) and upon approval conduct the TRE, and this Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the State Water Resources Control Board, this Order may be reopened and a limitation based on that objective included.
3. The Discharger shall use the best practicable cost-effective control technique currently available to limit mineralization to no more than a reasonable increment.
4. The Discharger shall comply with all the items of the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)", dated February 2004, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."
5. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2005-XXXX, which is part of this Order, and any revisions thereto, as ordered by the Executive Officer.
6. Under Monitoring and Reporting Program No. R5-2005-XXXX the Discharger shall report trace concentrations of constituents found during the analysis of samples. Trace values are estimates of concentrations detected between the detection level and the practical quantitation level. Trace values are not always reliable as there is a potential for interferences below the practical quantitation level. As effluent limitations specified in this permit are at or above the practical quantitation level, reporting trace values shall not be a violation of an effluent limitation. Trace values are to be used to help operate the treatment facility and to provide information to minimize violations of effluent limits.
7. This Order expires on **X XXXXXXX XXXX** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.
8. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of or clearance from the State Water Resources Control Board (Division of Water Rights).
9. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding

owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name, address, and telephone number of the persons responsible for contact with the Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on XX XXXXXX XX.

THOMAS R. PINKOS, Executive Officer

Revised 2/9/05:AMM